

U.S. Patent Application Serial No. 10/758,333
 Reply to Office Action dated November 09, 2004

Amendments to the Specification:

Please amend paragraph [0071] as follows:

[0071] For the conventional motor vehicles, the target road-wheel steering angle δ is expressed as a product between the road-wheel steering angle gain K_c and driver-designated steering angle θ , i.e. $\delta = K_c \cdot \theta$. For the motor vehicle 24 subjected to the travel direction control by the inventive control device 10, the target road-wheel steering angle δ is expressed as a product between a difference between the driver-designated target steering angle θ and angle of travel direction ψ and the road-wheel steering angle gain K_a , i.e. $K_a(\theta - \psi)$. For both the conventional motor vehicles and the motor vehicle 24 controlled by the inventive control device 10, the yaw rate γ is expressed by

$$\gamma = \frac{V}{[L]([L] + A \cdot V^2)} \cdot \delta$$

$$[L] = \frac{V}{[L]} \cdot \delta$$

The angle of travel direction ψ is derived by integrating the yaw rate over time, i.e. $\psi = \int \gamma dt$.

Forward component of the vehicle velocity V is expressed as a product between the cosine of the

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angle of travel direction ψ and the vehicle velocity V , i.e. $\frac{dx}{dt} = V \cdot \cos\psi$, while a lateral component of the vehicle velocity V is expressed as a product between the sine of the angle of travel direction ψ and the vehicle velocity V , i.e. $\frac{dy}{dt} = V \cdot \sin\psi$. The forward vehicle position is determined by integrating the forward vehicle velocity, i.e. $x = V \cdot \int \cos\psi dt$, while the lateral vehicle position is determined by integrating the lateral vehicle velocity, i.e. $y = V \cdot \int \sin\psi dt$. .

Further, for both the conventional motor vehicles and the motor vehicle 24 controlled by the inventive control device 10, the driver-designated steering angle θ is determined by subtracting, from a target lateral course position y_{OL} , a product among the lateral vehicle position, front gazing point L and angle of travel direction ψ and then multiplying the subtraction result by the driver F/B gain, i.e. $\theta = hc(y_{OL} - y - L\psi)$ or $\theta = ha(y_{OL} - y - L\psi)$.